"The Enterprise price lists for software and services have been a big benefit to us. It has allowed us to quickly contract for professional services for software that would have taken a lot longer to bid for — likely leading to a lapse in services."

—David Wu
Assistant Superintendent/CIO Department of Education (DOE)

6.2 PROGRAM: ENTERPRISE SHARED SERVICES

Objective: Provide central shared services including: Email and Directory services, Content and Collaboration applications, and Document Management tools.

Description: Enterprise shared services are those business functional services that are common across all line-of-business activities, and include the management of key shared data. Examples include business functions such as financial tracking, asset inventory tracking, and procurement execution; and common IT services such as email, collaboration, and digital content management. Enterprise shared services are being developed, deployed, and provided by OIMT, and an effort is being made to reduce or eliminate redundant investments and maximize the State's purchasing power.

Impact: By consolidating and centralizing common services and widely utilized technologies, the State is able to dramatically reduce costs and improve efficiencies, while departments are able to outsource basic technology needs to focus on mission-critical services and initiatives. The result is better use of taxpayer dollars and improved services from departments.

Related Projects and Initiatives:

Enterprise Licensing Agreements
Since 2013, OIMT has aggressively been negotiating with multiple software vendors on behalf of State departments and is looking to combine common departmental technology needs (such as email or collaboration programs) into enterprise-level purchases. By combining shared departmental service and application needs, the State is in a much stronger negotiating position when purchasing from vendors and is able to reduce costs. Through OIMT-led enterprise licensing agreements, the State has been able to increase purchase volumes and reduce licensing expenses by as much as 40%–60% statewide, resulting in potential taxpayer savings of millions of dollars.
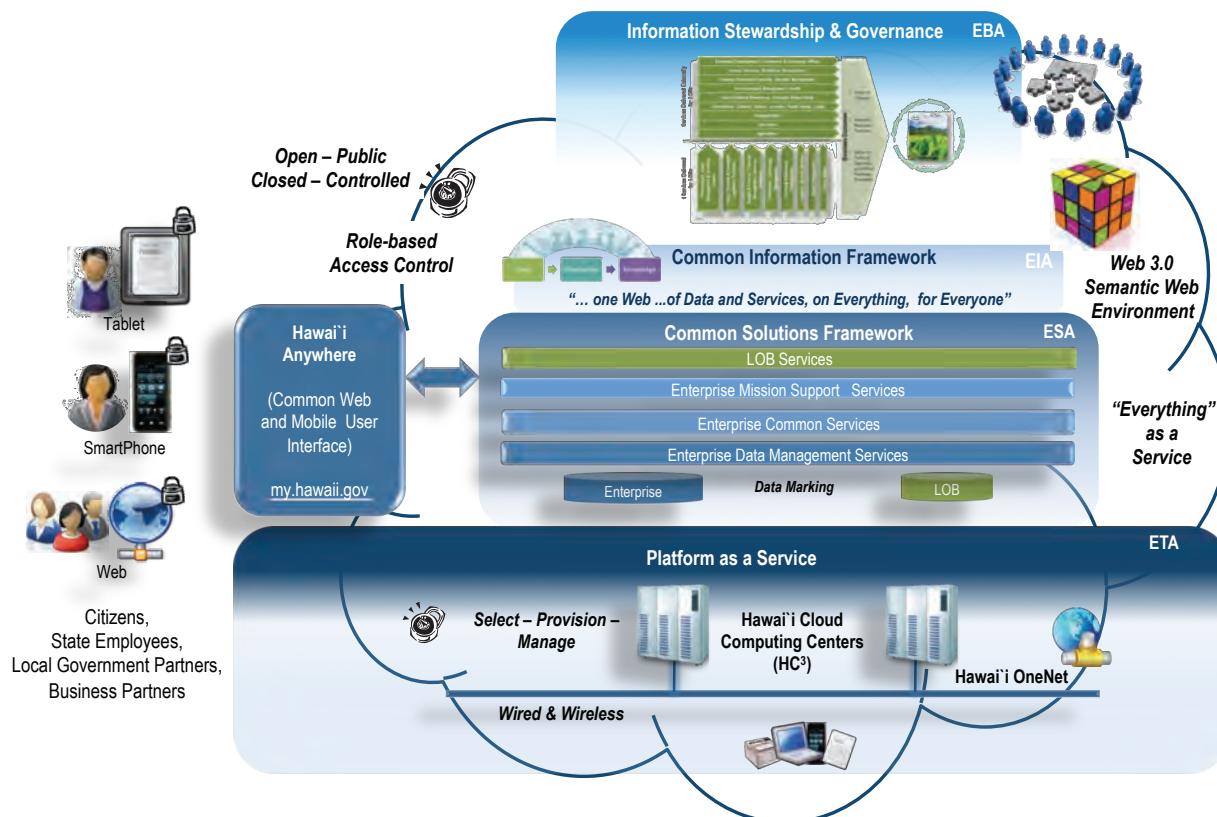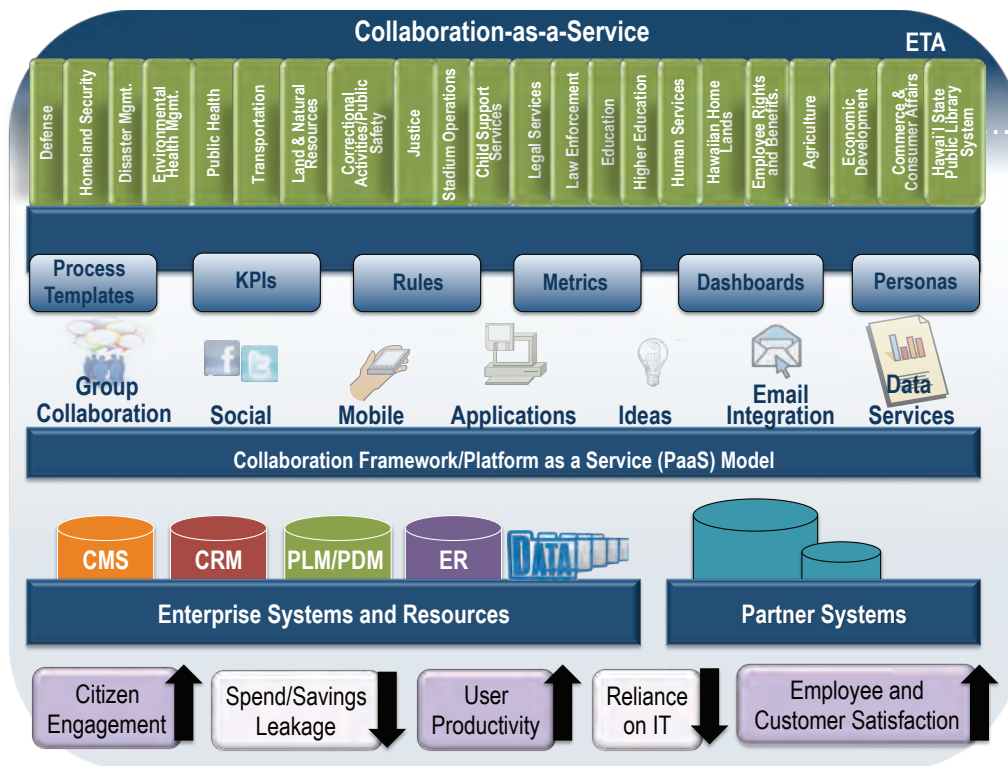
Cloud Services
In early 2013, OIMT undertook a cloud readiness assessment to evaluate and confirm that the ICSD and OIMT teams could launch and operate an internal private cloud, as well as provide guidance on improvements needed to institute a private cloud, including improvements to people, processes, and tools. The assessment reviewed 30 areas, including: organizational strategy, financial control, service control, operations control, and infrastructure control.

The assessment recommended that OIMT/ICSD implement a new internal private cloud (IPC) for best-practice Infrastructure-as-a-Service (IaaS) and implement a cloud operations leadership team (COLT) structure with responsibility for:
- Architecture strategy
- Service strategy and design
- Service governance
- Infrastructure provisioning processes and provisioning strategy

In 2013, OIMT began implementing virtualized private cloud services, offering departments shared IT services to allow their IT staffs to refocus on mission-critical applications. Services to be offered include Infrastructure-as-a-Service (IaaS) and Virtual Desktop Infrastructure (VDI), Software-as-a-Service (SaaS), Security-as-a-Service (ScaaS), and IT-as-a-Service (ITaaS). Some departments have already begun to shift their hosting needs to OIMT, such as the Hawaiian Criminal Justice Data Center, which

will migrate a significant portion of its digital information into OIMT's hosted environment. Likewise, several departments have begun to consolidate infrastructure in anticipation of moving to OIMT's shared environment, such as the Department of Health, which has increased its server virtualization by 30%. As with enterprise licensing agreements, shared cloud services reduce operating costs across departments. Virtualization of servers reduces power consumption, use of space and cooling elements, and provides exponential increases in computing power that can be assigned to a department as needed. One vertical rack of equipment including servers, memory, and disk storage can accommodate up to 300 high-capacity virtual servers.

Cloud-Based Email

To centralize email operations, ensure consistent security and privacy controls, and take advantage of new cloud technology features, OIMT has begun the process of establishing a statewide email platform that will host all State government email accounts in the cloud. Currently, several departments are operating on outdated email servers, with the State maintaining several email systems and versions. By consolidating the various State email clients to a single cloud-based system, the State will standardize email operations and eliminate the need to maintain redundant systems, and can offer enhanced features such as up to 50 times more storage and strict compliance with privacy protocols (e.g., HIPAA, CJIS compliance). OIMT is currently in the exploration phases of coordinating with departments to migrate to a new standardized email platform. OIMT is also exploring the incorporation of unified communications tools and office productivity tools that may be integrated into the standardized email platform. As Donn Yabusaki, Information Systems Manager for the Department of Commerce and Consumer

Affairs (DCCA) notes, "We're currently looking to modernize our Lotus Notes applications and migrate custom software applications. As part of that effort, we've been actively working with OIMT to map out how to best migrate and transition applications."

Maritime Wireless Network

The Maritime Wireless Network System (MWNS) is a system that is designed to connect all the commercial harbors in the State of Hawai'i, to provide for increased security and enhanced communications at these facilities. When completed, it will allow video surveillance systems that are currently being installed at these locations to be connected with each other and monitored from a central location 24 hours per day, seven days per week.

The MWNS involves the construction and installation of steel monopoles (most of which are 80 feet tall and designed to withstand Category 4 hurricane winds) for mounting antennas, microwave dishes and communications equipment at the harbors. Additional antennas and equipment are also being procured and installed at other locations throughout the state to facilitate transmission of the data stream and to provide redundant connections through the State's institutional fiber optic network (INET).

Program milestones completed in 2011–2013 include:
- Contracted with an engineering consultant for design of the monopole projects and other required professional services.
- Design and installation of monopoles.
- Replacement of existing poles with new monopoles.
- Procurement and engineering of antennas and communications equipment. Installation is ongoing at the existing remote communication facilities, and at harbors where construction activity has been completed.

- Ancillary construction upgrades to electrical infrastructure and replacement or re-installation of area lighting systems at selected harbors.
- Three (3) Memoranda of Agreement between State departments of Accounting and General Services (DAGS), Defense (DOD), and Transportation (DOT) addressing financial, construction, operation, and maintenance issues.
- Successful closeout of 2008 grant.

The MWNS is funded under four Port Security Grant Programs totaling $7,445,804 that the State received from the United States Department of Homeland Security, with a State matching amount of $1,964,966. The State departments involved in the MWNS project include: Accounting and General Services, Defense, Transportation, and OIMT.

Geographic Information Systems (GIS)
A geographic information system (GIS) includes the hardware, software, and data for capturing, analyzing, and displaying geographic information, in the form of maps, reports, and charts.

This dynamic mapping information allows the State to view and analyze geographic data to show patterns and relationships.
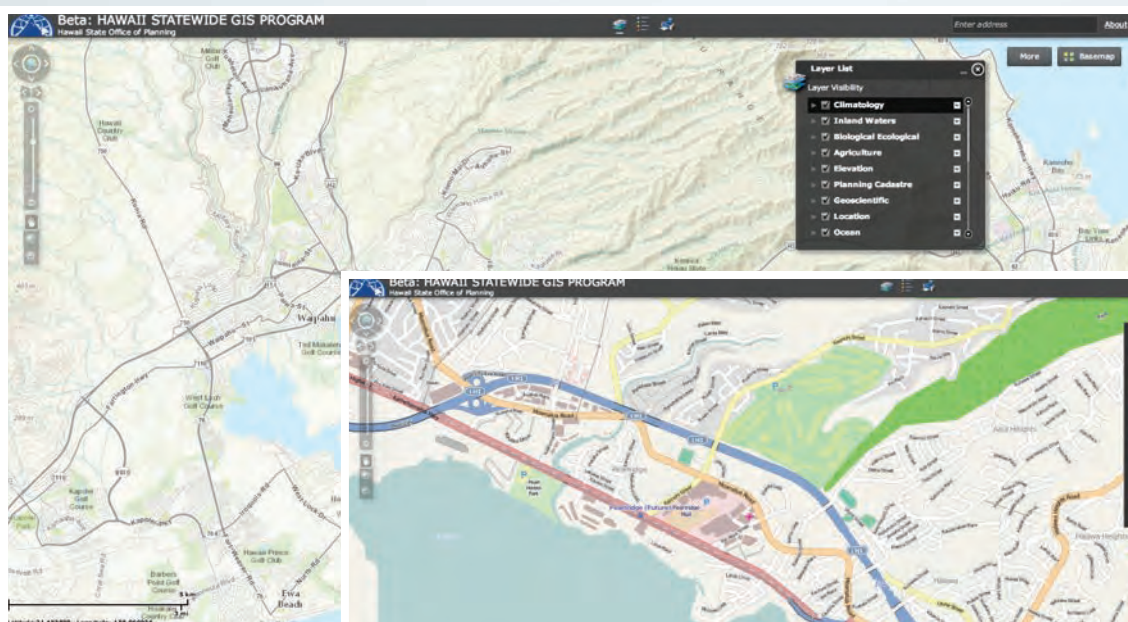
In 2013, OIMT introduced GIS-as-a-Service, replacing the former static-based shapefiles, with a dynamic online mapping service. The beta service allows users viewing capabilities and the ability to include layers such as climatology, inland waters, agriculture, and elevation. The map services are available to organizations outside the State government, including local counties and Neighbor Islands, and popular consumer map providers such as Apple and Google. The beta service is available at http://gis.Hawaii.gov/.

By utilizing GIS mapping information, the State and county governments can: make better decisions regarding the location of projects (including site selections); improve coordination with Neighbor Islands; increase efficiency and reduce costs through an enhanced understanding of the state's geography; provide citizens with more transparency by showing the location of service requests and works in progress; and provide more-reliable data to programs such as Apple Maps and Google Maps — resulting in more-detailed maps.

"Significant progress has been made this year in modernizing the Statewide GIS. Using the 2011 GIS Blueprint for Change developed in coordination with GIS users and stakeholders throughout Hawai'i, and with support from OIMT, we were able to migrate many of the 200+ data layers maintained by the Office of Planning to a relational database management system housed on new equipment dedicated to the Statewide GIS. This makes spatial information more accessible and useable by decision-makers."

—Jesse K. Souki, Director
Office of Planning, State of Hawai'i

Online GeoPlatform: http://gis.hawaii.gov